

Dual

Dual CL 450 CL 470 Ersatzteile CL 490

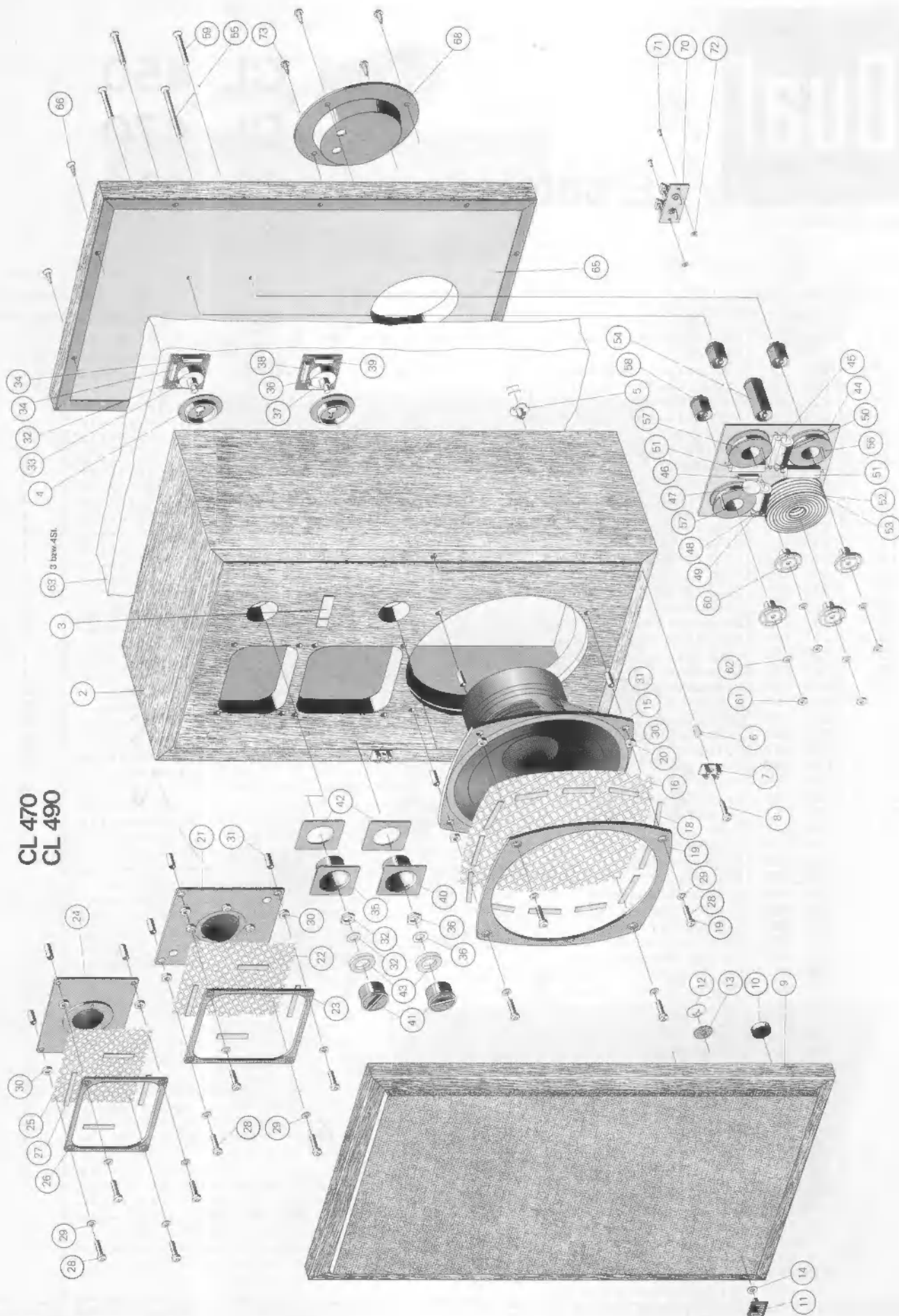
Ausgabe Dezember 1976

Pos.	CL 450	Bezeichnung	Anzahl
1	241 794	Lautsprechergehäuse kpl. (bestehend aus Pos. 2, 3, 4, 5, 6, 7, 8, 9, 52, 54)	1
2**	239 629	Lautsprechergehäuse	1
3	240 947	Typenzeichen	1
4**	239 052	Schalterwanne	1
5**	239 046	Einschlagmutter M 4 x 8	1
6**	238 978	Spreizdübel	12
7	239 010	Halteklammer	2
8	239 160	Linseblechschraube 8 3,5 x 16	2
9	241 398	Schallwandabdeckung kpl. (besteh. aus Pos. 9, 10, 11, 12, 13, 14)	1
10	239 009	Dämpfungsscheibe	4
11	222 449	Dual-Zeichen	1
12	239 099	Sperrscheibe 5	1
13	210 667	Scheibe 5,3/10/0,5	1
14	222 275	Scheibe 5,2/15/0,3	1
15	241 795	Tieftonlautsprecher 205/25/8 Ohm	1
17	239 039	Lautsprechergitter (Tiefton)	1
18	241 796	Abdeckung (Tiefton)	1
19	241 591	Schaumstoffstreifen	1
20	241 797	Kalotten-Hochton-Lautsprecher 25/25/8 Ohm	1
22	239 041	Lautsprechergitter (Hochton)	1
23	241 979	Abdeckung (Hochton)	1
24	241 590	Schaumstoffstreifen	4
25	240 191	Linse schraube BM 4 x 30	8
26	239 049	Scheibe 4,3	8
27	239 048	Scheibe 5,4/10/2,5	8
28	239 047	Hülse	8
29	241 798	Schalter HT kpl. (bestehend aus Pos. 29, 30, 31)	1
30	219 775	Draht-Widerstand 1,8 Ω /5 W/10 %	2
31	204 032	Draht-Widerstand 2,7 Ω /5 W/10 %	1
32	239 091	Schalteergehäuse	1
33	239 062	Drehknopf	1
34	239 087	Dämpfungsscheibe	1
35	239 088	Filzscheibe	1
36	240 977	Ätze schaltplatte mit Lötösen	1
37	237 956	Draht-Widerstand 47 Ω /5 W/10 %	1
38	223 366	Draht-Widerstand 1 Ω /5 W/10 %	1
39	237 957	PTC-Widerstand 0,7 Ω /0,7 A	1
40	224 409	Tonfrequenz-Elyt-Kondensator 20 μ F/35 V/20 %	1
41	237 954	Folien-Kondensator 10 μ F/250 V/10 %	1
42	239 121	Spule 3,5 mH	1
43	218 306	Spulenhalter	1
44	225 697	Senkschraube 4 x 70	1
45	213 330	Spule 0,38 mH	1
46	218 307	Spulenhalter	1
47	204 366	Senkschraube M 4 x 50	1
48	227 842	Spannstück	2
49	210 367	Sechskantmutter M 4	2
50	210 641	Scheibe 4,2/10/1	2
51	238 321	Polyester matze	2
52	241 799	Rückwand kpl. (bestehend aus Pos. 53, 55, 60)	1
53**	239 627	Rückwand	1
54	239 134	Spanplatten-Senkschraube 3,5 x 35	10
55	240 175	Anschlußwanne kpl. (bestehend aus Pos. 56, 57)	1
56**	240 182	Anschlußwanne	1
57	241 800	Anschlußfederklemme kpl. (bestehend aus Pos. 58, 59, 60)	1
58**	240 183	Anschlußfederklemme	1
59**	233 117	Rohrniel mit Kappe	2
60	218 043	Scheibe 3,2/7/0,5	2
61	229 259	Linseblechschraube 8 3,9 x 13	4
62	241 801	Verpackungskarton kpl.	1
63	240 180	Technisches Datenblatt	1

** Nicht als Ersatzteil erhältlich

Änderungen vorbehalten !

CL 470
CL 490

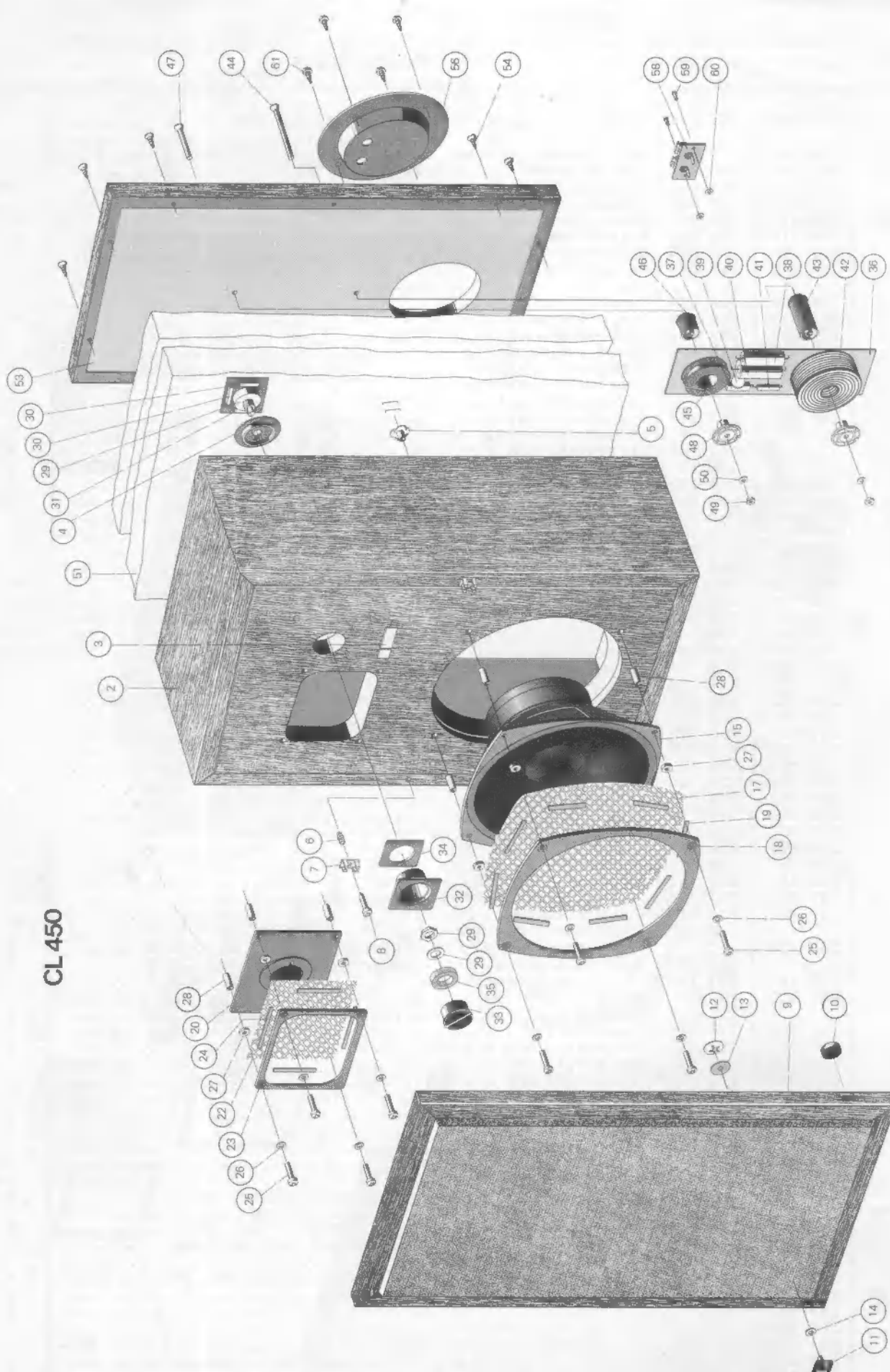


Pos.	CL 470	CL 490	Bezeichnung	Anzahl
1	241 802	241 974	Lautsprechergehäuse kpl. (besteh. aus Pos. 2, 3, 4, 5, 6, 7, 8, 9, 67, 69)	1
2**	239 635	239 641	Lautsprechergehäuse	1
3	240 948	240 949	Typenzeichen	1
4**	239 052	239 052	Schalterwanne	2
5**	239 046	239 046	Einschlagmutter M 4 x 8	12
6**	238 978	238 978	Spreadsübel	12
7	239 010	239 010	Halteklammer	2
8	239 160	239 160	Linseblechschraube B 3,5 x 16	2
9	241 399	241 975	Schallwandabdeckung kpl. (besteh. aus Pos. 9, 10, 11, 12, 13, 14)	1
10	239 009	239 009	Dämpfungsscheibe	4
11	222 449	222 449	Dual-Zeichen	1
12	239 099	239 099	Sperrscheibe 5	1
13	210 667	210 667	Scheibe 5,3/10/0,5	1
14	222 275	222 275	Scheibe 5,2/15/0,3	1
15	241 803	241 981	Tieftonlautsprecher	1
16	239 038	240 198	Lautsprechergitter (Tiefton)	1
17	241 804	241 976	Abdeckung (Tiefton)	1
18	241 591	241 591	Schaumstoffstreifen	8/12
19		240 488	Linsenschraube BM 4 x 35	4
20		241 061	Distanzrolle	4
21	241 980	241 982	Kalotten-Mittelton-Lautsprecher	1
22	239 040	239 040	Lautsprechergitter (Mittelton)	1
23	241 805	241 805	Abdeckung (Mittelton)	1
24	241 797	241 797	Kalotten-Hochton-Lautsprecher	1
25	239 041	229 041	Lautsprechergitter (Hochton)	1
26	241 979	241 979	Abdeckung (Hochton)	1
27	241 590	241 590	Schaumstoffstreifen	1
28	240 191	240 191	Linsenschraube BM 4 x 30	12/8
29	239 049	239 049	Scheibe 4,3	12
30	239 048	239 048	Scheibe 5,4/10/2,5	12/8
31	239 047	239 047	Hülse	12
32	241 798	241 798	Schalter HT kpl. (bestehend aus Pos. 32, 33, 34)	1
33	219 775	219 775	Draht-Widerstand 1,8 Ω /5 W/10 %	2
34	204 032	204 032	Draht-Widerstand 2,7 Ω /5 W/10 %	1
35	239 091	239 091	Schaltergehäuse HT	1
36	241 971	241 971	Schalter MT kpl. (bestehend aus Pos. 36, 37, 38, 39) ...	1
37	219 775	219 775	Draht-Widerstand 1,8 Ω /5 W/10 %	1
38	239 123	239 123	Draht-Widerstand 3,9 Ω /5 W/10 %	1
39	239 124	239 124	Draht-Widerstand 5,6 Ω /5 W/10 %	1
40	239 054	239 054	Schaltergehäuse MT	1
41	239 062	239 062	Drehknopf	2
42	239 087	239 087	Dämpfungsscheibe	2
43	239 088	239 088	Filzscheibe	2
44	239 862	239 862	Ätzschaltplatte mit Lötösen (LW)	1
45	239 130	239 130	Drahtwiderstand 2,7 Ω /9 W/10 %	1
46	237 956	237 956	Drahtwiderstand 47 Ω /5 W/10 %	1
47	237 957	237 957	PTC-Widerstand 0,7 Ω /0,7 A	1
48		239 127	Tonfrequenz-Elyt-Kondensator 60 μ F/ 63 V/20 %	1
49	239 128		Tonfrequenz-Elyt-Kondensator 33 μ F/ 63 V/20 %	2
50		239 131	Tonfrequenz-Elyt-Kondensator 22 μ F/ 63 V/20 %	1
51	233 141	233 141	Folien-Kondensator 4,7 μ F/250 V/10 %	2
52	239 162		Spule 5 mH	1
53		239 143	Spule 5,5 mH	1
54	218 306	218 306	Spulenhalter	1
55	225 697	225 697	Senkschraube M 4 x 70	1
56	209 890	209 890	Spule 1,1 mH	1
57	213 330	213 330	Spule 0,38 mH	2
58	218 307	218 307	Spulenhalter	3
59	204 366	204 366	Senkschraube M 4 x 50	3
60	227 842	227 842	Spannstück	4
61	210 367	210 367	Sechskantmutter M 4	4
62	210 641	210 641	Scheibe 4,2/10/1	4
63	238 412	238 412	Polyestermatte	3/4
64	241 972	241 977	Rückwand kpl. (bestehend aus Pos. 65, 66, 67)	1
65**	239 633	239 639	Rückwand	1
66	239 134	239 134	Spanplattensenkschraube 3,5 x 35	10
67	240 175	240 175	Anschlußwanne kpl. (bestehend aus Pos. 68, 69)	1
68**	240 182	240 182	Anschlußwanne	1
69	241 800	241 800	Anschlußfederklemme kpl. (bestehend aus Pos. 70, 71, 72)	1
70**	240 183	240 183	Anschlußfederklemme	1
71**	233 117	233 117	Rohrniet mit Kappe	2
72	218 403	218 043	Scheibe 3,2/7/0,5	2
73	229 259	229 259	Linseblechschraube B 3,9 x 13	4
74	241 393	241 978	Verpackungskarton kpl.	1
75	240 185	240 486	Technisches Datenblatt	1

** Nicht als Ersatzteil erhältlich

Änderungen vorbehalten!

CL 450



Dual Gebrüder Steidinger · 7742 St. Georgen/Schwarzwald



Edition April 1977

HiFi - Speakers Service - Information



CL 450

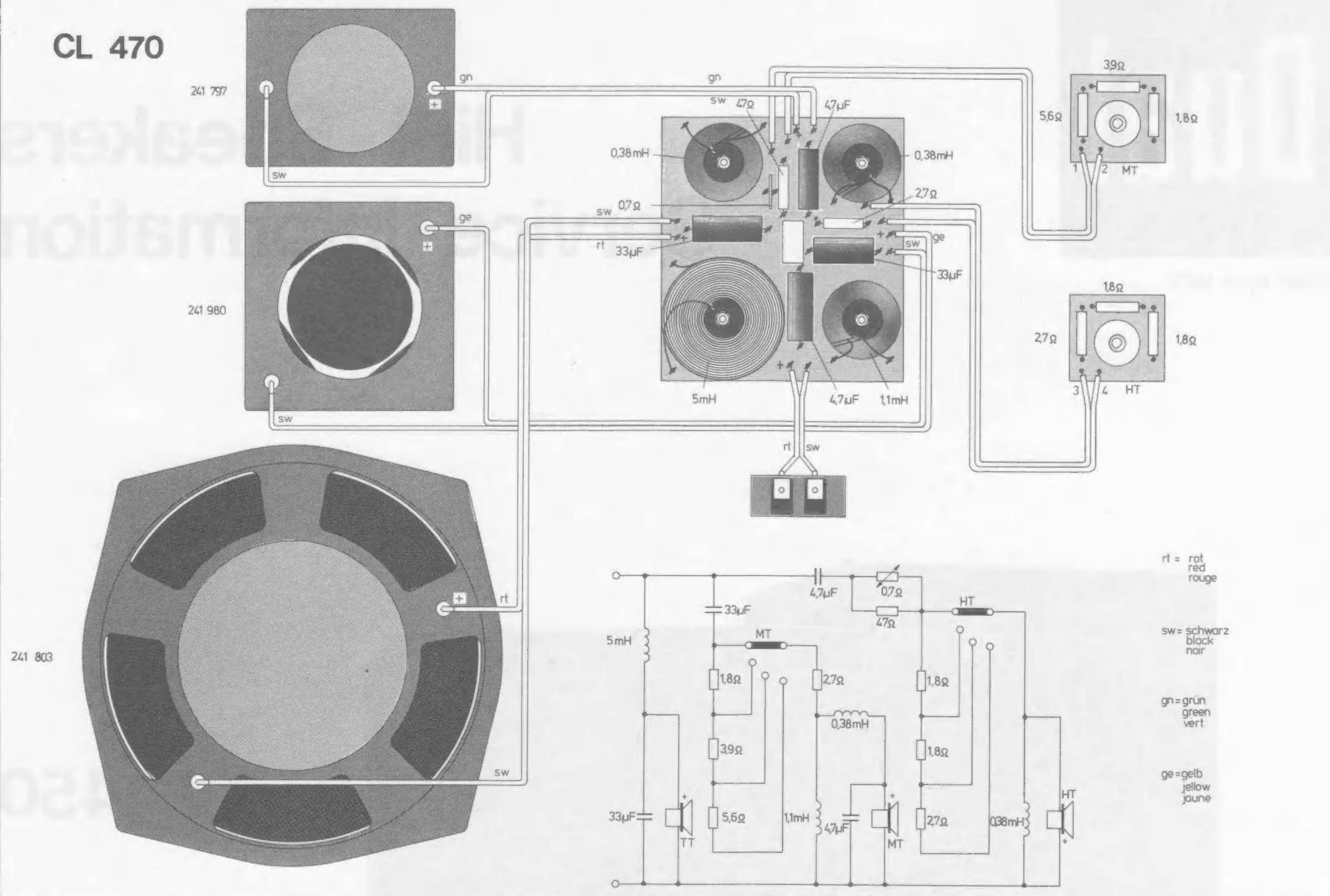
CL 470

CL 490

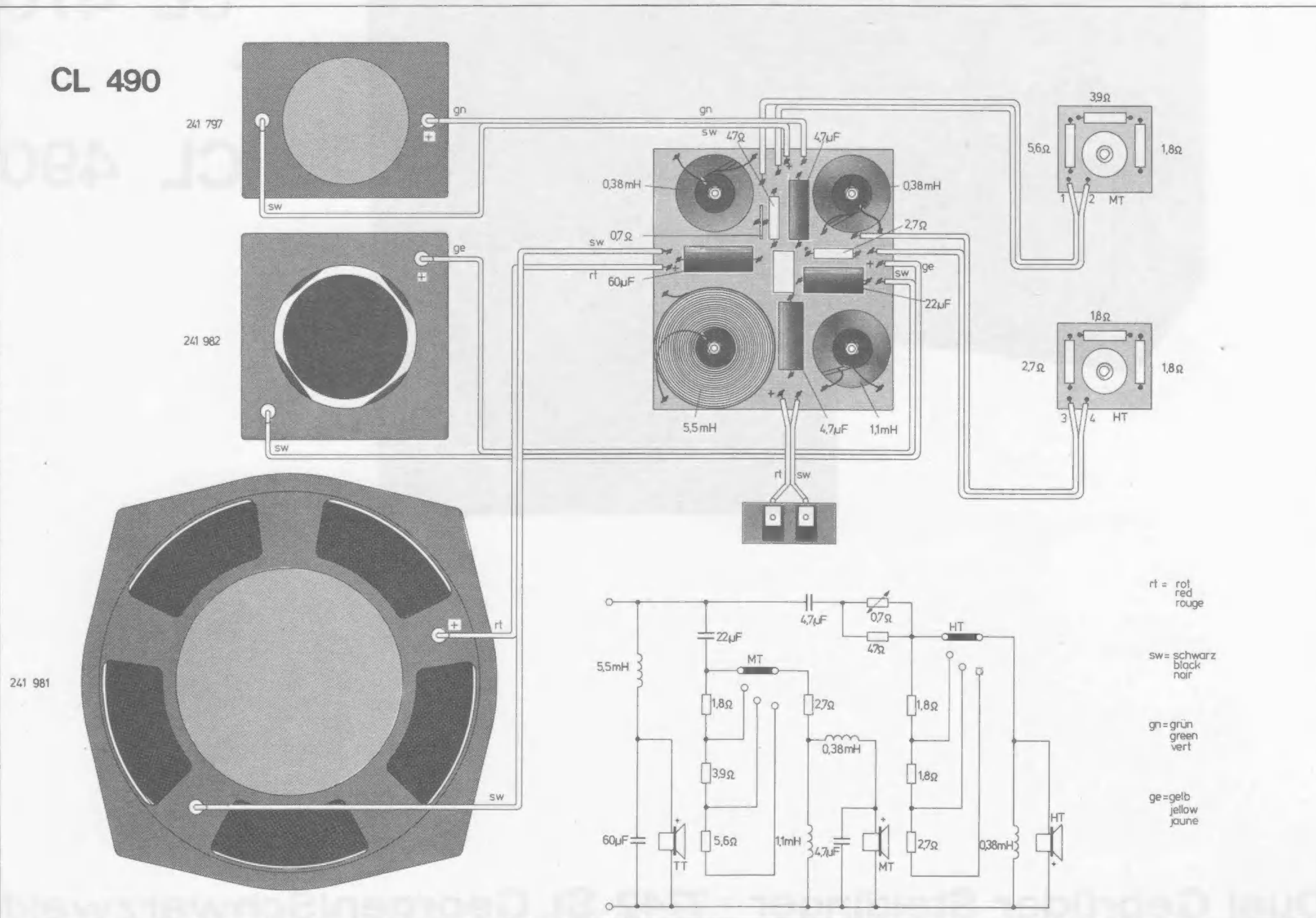
Dual Gebrüder Steidinger · 7742 St. Georgen/Schwarzwald



CL 470



CL 490



Replacement parts

CL 470	CL 490	Description	Qty.
241 802	241 974	Speaker cabinet compl.	1
240 948	240 949	Identification plate	1
239 010	239 010	Holding clip	2
239 160	239 160	Fillister sheet metal screw B 3.5 x 16	2
241 399	241 975	Baffle covering compl.	1
239 009	239 009	Damping washer	4
222 449	222 449	Dual emblem	1
239 099	239 099	Stop washer 5	1
210 667	210 667	Washer 5.3/10/0.5	1
222 275	222 275	Washer 5.2/15/0.3	1
241 803	241 981	Woofers	1
239 038	240 198	Loudspeaker grill (woofer)	1
241 804	241 976	Covering (woofer)	1
241 591	241 591	Damping material (foam rubber)	8/12
	240 488	Fillister screw BM 4 x 35	4
	241 061	Spacer	4
241 980	241 982	Medium frequency speaker, dome type	1
239 040	239 040	Speaker grille (medium frequency)	1
241 805	241 805	Covering (medium frequency)	1
241 797	241 797	Tweeter dome type	1
239 041	229 041	Speaker grille (tweeter)	1
241 979	241 979	Covering (tweeter)	1
241 590	241 590	Damping material (foam rubber)	8
240 191	240 191	Fillister screw BM 4 x 30	12/8
239 049	239 049	Washer 4.3	12
239 048	239 048	Washer 5.4/10/2.5	12/8
239 047	239 047	Sleeve	12
241 798	241 798	Switch HT compl.	1
219 775	219 775	Wire resistor 1.8 ohms/5 W/10 %	2
204 032	204 032	Wire resistor 2.7 ohms/5 W/10 %	1
239 091	239 091	Switch enclosure HT	1
241 971	241 971	Switch MT compl.	1
219 775	219 775	Wire resistor 1.8 ohms/5 W/10 %	1
239 123	239 123	Wire resistor 3.9 ohms/5 W/10 %	1
239 124	239 124	Wire resistor 5.6 ohms/5 W/10 %	1
239 054	239 054	Switch enclosure MT	1
239 062	239 062	Rotary knob	2
239 087	239 087	Damping washer	2
239 088	239 088	Felt washer	2
239 862	239 862	Printed circuit board with soldering lugs	1
239 130	239 130	Wire resistor 2.7 ohms/9 W/10 %	1
237 956	237 956	Wire resistor 47 ohms/5 W/10 %	1
237 957	237 957	PTC, resistor 0.7 ohms/0.7 A	1
	239 127	Audio frequency capacitor 60 µF/ 63 V/20 %	1
239 128		Audio frequency capacitor 33 µF/ 63 V/20 %	2
	239 131	Audio frequency capacitor 22 µF/ 63 V/20 %	1
233 141	233 141	Foil capacitor 4.7 µF/250 V/10 %	2
239 162		Coil 5 mH	1
	239 143	Coil 5.5 mH	1
218 306	218 306	Coil holder	1
225 697	225 697	Sunk screw M 4 x 70	1
209 890	209 890	Coil 1.1 mH	1
213 330	213 330	Coil 0.38 mH	2
218 307	218 307	Coil holder	3
204 366	204 366	Sunk screw M 4 x 50	3
227 842	227 842	Clamp	4
210 367	210 367	Hex nut M 4	4
210 641	210 641	Washer 4.2/10/1	4
238 412	238 412	Polyester mat	3/4
241 972	241 977	Rear wall compl.	1
239 134	239 134	Special c/sunk screw 3.5 x 35	10
240 175	240 175	Connection terminal compl.	1
241 800	241 800	Connection spring clip compl.	1
218 403	218 043	Washer 3.2/7/0.5	2
229 259	229 259	Fillister sheet metal screw B 3.9 x 13	4
241 393	241 978	Shipping carton compl.	1
240 185	240 486	Technical data sheet	1

Alteration reserved!

Technical data

	CL 470	CL 490
Frequency response	25 Hz — 25 kHz according to German Industry Standard DIN 45 500	20 Hz — 25 kHz according to German Industry Standard DIN 45 500
Resonance	50 Hz	50 Hz
Nominal impedance	8 ohms	8 ohms
Power handling capacity	70 watts	100 watts
Music rating power	130 watts	130 watts
Sound pressure level (SPL)	on axis at 1 m for 1 W weighted noise signal: 85 dBA	on axis at 1 m for 1 W weighted noise signal: 85 dBA
Harmonic distortion	(referred to 86 dB SP on axis at 2 m) from 100 Hz — 25 kHz < 1 %	(referred to 86 dB SP on axis at 2 m) from 50 Hz — 25 kHz < 1 %
Components	<p>one special 245 mm ϕ woofer, 37 mm ϕ voice coil, magnetic induction 10.5 dT (10 500 gauss) magnetic flux 1 020 μWb (102 000 maxwell)</p> <p>one special 37 mm ϕ dome type tweeter, 37 mm ϕ voice coil, magnetic induction 13 dT (13 000 gauss) magnetic flux 460 μWb (46 000 maxwell)</p> <p>one special midrange speaker with a hemispheric dome type membrane 25 mm ϕ, 25 mm ϕ voice coil, magnetic induction 16.5 dT (16 500 gauss) magnetic flux 400 μWb (40 000 maxwell)</p> <p>four LC filters, crossovers at 600/3 000 Hz attenuation 12 dB/octave</p> <p>one compensating network for frequency response and phase correction, electronic protection circuit against thermal overload of tweeter.</p> <p>one medium frequency level control, max. attenuation 6 dB staged in 2 dB steps.</p> <p>one tweeter level control, max. attenuation 6 dB staged in 2 dB steps.</p>	<p>one special 300 mm ϕ woofer, 37 mm ϕ voice coil, magnetic induction 12.5 dT (12 500 gauss) magnetic flux 600 μWb (60 000 maxwell)</p> <p>one special 50 mm ϕ dome type tweeter, 50 mm ϕ voice coil, magnetic induction 12.5 dT (12 500 gauss) magnetic flux 600 μWb (60 000 maxwell)</p> <p>one special midrange speaker with a hemispheric dome type membrane 25 mm ϕ, 25 mm ϕ voice coil, magnetic induction 16.5 dT (16 500 gauss) magnetic flux 400 μWb (40 000 maxwell)</p> <p>four LC filters, crossovers at 600/3 000 Hz attenuation 12 dB/octave</p> <p>one compensating network for frequency response and phase correction, electronic protection circuit against thermal overload of tweeter.</p> <p>one medium frequency level control, max. attenuation 6 dB staged in 2 dB steps.</p> <p>one tweeter level control, max. attenuation 6 dB staged in 2 dB steps.</p>
Amplifier output (recommended)	20 — 100 watts (music power/channel)	20 — 130 watts (music power/channel)
Room dimension (recommended)	20 — 50 m ²	20 — 60 m ²
Dimensions	590 x 330 x 260 mm (W x H x D)	680 x 380 x 290 mm (W x H x D)
Gross volume	approx. 50.6 l	approx. 75 l
Weight	approx. 15.5 kg	approx. 20 kg
Color model	walnut finish with dark brown cloth grille, removable	walnut finish with dark brown cloth grille, removable

Technical data

Frequency response

Resonance

Nominal impedance

Power handling capacity

Music rating power

Sound pressure level (SPL)

Harmonic distortion

(DIN 45 500)

Complement

Amplifier output (recommended)

Room dimension (recommended)

Dimensions

Gross volume

Weight

Color model

CL 450

30 Hz — 25 kHz according to German Industry Standard DIN 45 500

70 Hz

8 ohms

50 watts

80 watts

on axis at 1 m for 1 W weighted noise signal:
85 dBA

referred to 86 dB SP on axis at 2 m
from 100 Hz — 25 kHz < 1 %

one special 205 mm ϕ woofer, voice coil 37 mm ϕ ,
magnetic induction 10.5 dT (10 500 gauss) mag-
netic flux 690 μ Wb (69 000 maxwell)

one special 25 mm ϕ mid range speaker (dome type)
voice coil 25 mm ϕ magnetic induction 16.5 dT
(16 500 gauss) magnetic flux 400 μ Wb (40 000
maxwell)

two LC-filters, crossovers at 1 500 Hz attenuation
12 dB/octave

with compensating network for frequency response
and phase correction, electronic protection circuit
against thermal overload of tweeter

one tweeter level control, max. attenuation 6 dB
staged in 2 dB steps

20 — 80 watts (music power/channel)

20 — 40 m²

500 x 300 x 250 mm (W x H x D)

approx. 37.5 l

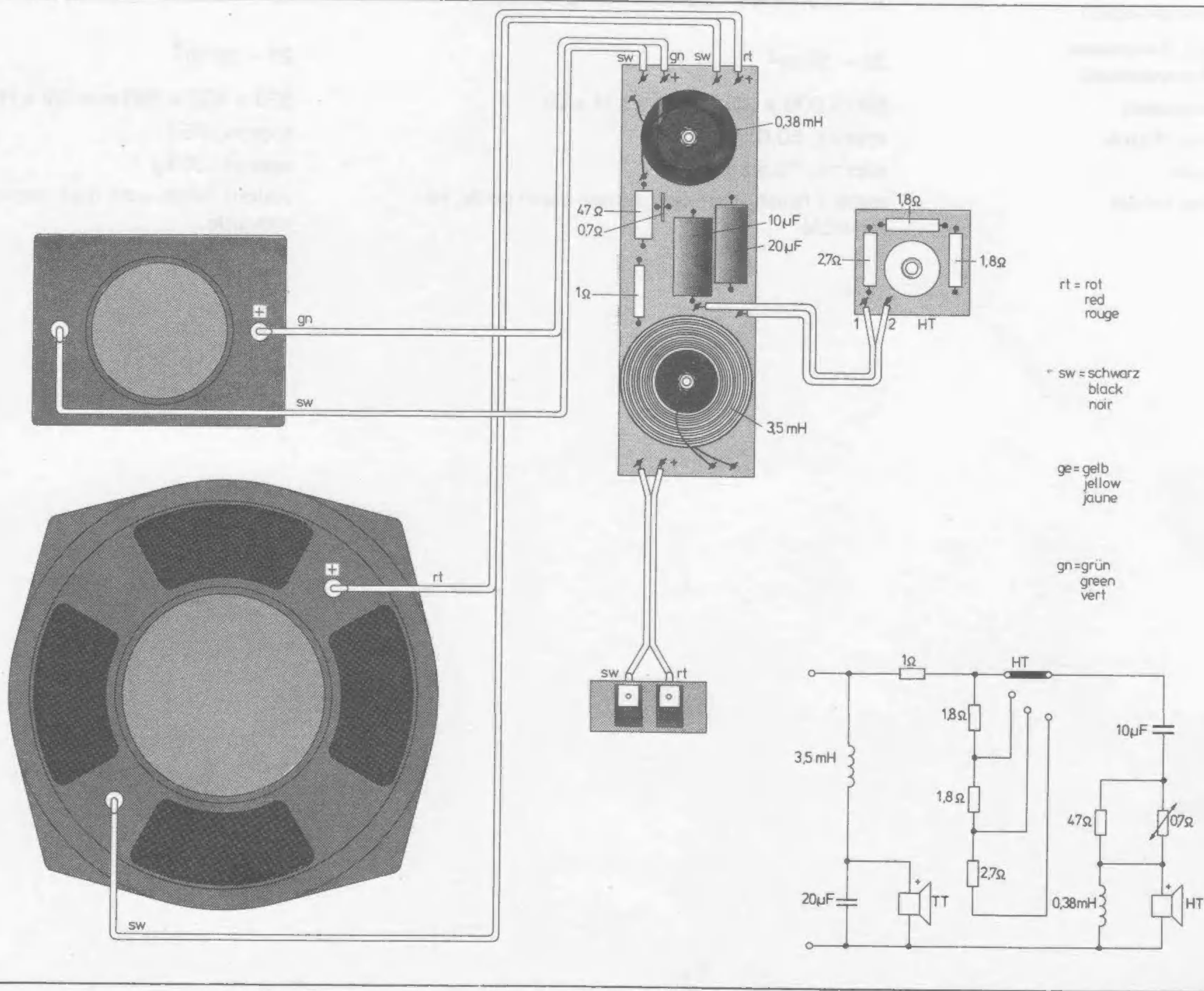
approx. 11.5 kg

walnut finish with dark brown cloth grille, removable

CL 450

241 797

241 795



Replacement parts

CL 450	Description	Qty.
241 794	Speaker cabinet compl.	1
240 947	Identification plate	1
239 010	Holding clip	2
239 160	Fillister sheet metal screw B 3.5 x 16	2
241 398	Baffle covering compl.	1
239 009	Damping washer	4
222 449	Dual emblem	1
239 099	Stop washer 5	1
210 667	Washer 5.3/10/0.5	1
222 275	Washer 5.2/15/0.3	1
241 795	Woofers 205/25/8 ohms	1
239 039	Speaker grille (woofer)	1
241 796	Covering (woofer)	1
241 591	Damping material (foam rubber)	8
241 797	Tweeter, dome type 25/25/8 ohms	1
239 041	Loudspeaker grille (tweeter)	1
241 979	Covering (tweeter)	1
241 590	Damping material (foam rubber)	4
240 191	Fillister screw BM 4 x 30	8
239 049	Washer 4.3	8
239 048	Washer 5.4/10/2.5	8
239 047	Sleeve	8
241 798	Switch HT compl.	1
219 775	Wire resistor 1.8 ohms/5 W/10 %	2
204 032	Wire resistor 2.7 ohms/5 W/10 %	1
239 091	Switch enclosure	1
239 062	Rotary knob	1
239 087	Damping washer	1
239 088	Felt washer	1
240 977	Printed circuit board with soldering lugs	1
237 956	Wire resistor 47 ohms/5 W/10 %	1
223 366	Wire resistor 1 ohms/5 W/10 %	1
237 957	PTC-resistor 0.7 ohms/0.7 A	1
224 409	Audio frequency electrolytic capacitor 20 F/35 V/20 %	1
237 954	Foil Capacitor 10 µF/150 V/20 %	1
239 121	Coil 3.5 mH	1
218 306	Coil holder	1
225 697	Sunk screw M 4 x 70	1
213 330	Coil 0.38 mH	1
218 307	Coil holder	1
204 366	Sunk screw M 4 x 50	1
227 842	Clamping piece	2
210 367	Hex nut M 4	2
210 641	Washer 4.2/10/1	2
238 321	Polyester mat	2
241 799	Rear wall compl.	1
239 134	Special c/sunk screw 3.5 x 35	10
240 175	Connection terminal compl.	1
241 800	Connection spring clip compl.	1
218 043	Washer 3.2/7/0.5	2
229 259	Fillister sheet metal screw B 3.9 x 13	4
241 801	Shipping carton compl.	1
240 180	Technical data sheet	1

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